

Translation

PATENT COOPERATION TREATY

PCT/BE2003/000179



PCT

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference BR11387	FOR FURTHER ACTION See Notification of Transmittal of International Preliminary Examination Report (Form PCT/IPEA/416)	
International application No. PCT/BE2003/000179	International filing date (<i>day/month/year</i>) 22 octobre 2003 (22.10.2003)	Priority date (<i>day/month/year</i>) 23 octobre 2002 (23.10.2002)
International Patent Classification (IPC) or national classification and IPC H01J 37/34		
Applicant ALLOYS FOR TECHNICAL APPLICATIONS S.A.		

1. This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.

2. This REPORT consists of a total of 5 sheets, including this cover sheet.

☐ This report is also accompanied by ANNEXES, i.e., sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).

These annexes consist of a total of _____ sheets.

3. This report contains indications relating to the following items:

- I ☒ Basis of the report
- II ☐ Priority
- III ☐ Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- IV ☐ Lack of unity of invention
- V ☒ Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- VI ☐ Certain documents cited
- VII ☐ Certain defects in the international application
- VIII ☐ Certain observations on the international application

Date of submission of the demand 18 mai 2004 (18.05.2004)	Date of completion of this report 17 February 2005 (17.02.2005)
Name and mailing address of the IPEA/EP	Authorized officer
Facsimile No.	Telephone No.

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No.

PCT/BE2003/000179

I. Basis of the report

1. With regard to the elements of the international application:*

- ☐ the international application as originally filed
- ☒ the description:
pages 1-13,15,16, as originally filed
pages _____, filed with the demand
pages 14, filed with the letter of 21 January 2005 (21.01.2005)
- ☒ the claims:
pages _____, as originally filed
pages _____, as amended (together with any statement under Article 19
pages _____, filed with the demand
pages 1-7, filed with the letter of 21 January 2005 (21.01.2005)
- ☒ the drawings:
pages 1/51-5/5, as originally filed
pages _____, filed with the demand
pages _____, filed with the letter of _____
- ☐ the sequence listing part of the description:
pages _____, as originally filed
pages _____, filed with the demand
pages _____, filed with the letter of _____

2. With regard to the language, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item.

These elements were available or furnished to this Authority in the following language _____ which is:

- ☐ the language of a translation furnished for the purposes of international search (under Rule 23.1(b)).
- ☐ the language of publication of the international application (under Rule 48.3(b)).
- ☐ the language of the translation furnished for the purposes of international preliminary examination (under Rule 55.2 and/ or 55.3).

3. With regard to any nucleotide and/or amino acid sequence disclosed in the international application, the international preliminary examination was carried out on the basis of the sequence listing:

- ☐ contained in the international application in written form.
- ☐ filed together with the international application in computer readable form.
- ☐ furnished subsequently to this Authority in written form.
- ☐ furnished subsequently to this Authority in computer readable form.
- ☐ The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.
- ☐ The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.

4. ☐ The amendments have resulted in the cancellation of:

- ☐ the description, pages _____
- ☐ the claims, Nos. _____
- ☐ the drawings, sheets/fig _____

5. ☐ This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).**

* Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report since they do not contain amendments (Rule 70.16 and 70.17).

** Any replacement sheet containing such amendments must be referred to under item 1 and annexed to this report.

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No.
PCT/BE 03/00179

V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Claims	1-7	YES
	Claims		NO
Inventive step (IS)	Claims	1-7	YES
	Claims		NO
Industrial applicability (IA)	Claims	1-7	YES
	Claims		NO

2. Citations and explanations

The application relates to a method for enhancing erosion uniformity on the sputtering surface of a non-ferromagnetic target. The method involves the addition of a ferromagnetic part on or inside the rear wall of the target in order to increase the parallelism of the magnetic induction lines.

Document D1, which is considered to be the prior art closest to the subject matter of claim 1, describes a method for enhancing erosion uniformity on the sputtering surface of a magnetron target.

Said document differs from claim 1 in that:

- (a) the target consists of a ferromagnetic material, and
- (b) the ferromagnetic part that is added is positioned adjacent to and spaced apart from said target.

Document D2 relates to a target having a ferromagnetic part incorporated into a non-ferromagnetic target. The aim is to arrive at target retention using magnetic force so that it is easier to change the target. D2 does not attempt to enhance erosion uniformity per se and does not

mention magnetic field geometry. In so far as the subject matter of the application is intended to maximise magnetic field parallelism in a non-ferromagnetic target, it differs significantly from said document.

Document D3, which aims to flatten said field at the target, also teaches the addition of a ferromagnetic part. However, unlike in the application, said part is spaced apart from the target (like in D1). The part is positioned between the magnets and is flush therewith. There is nothing in D3 that could suggest positioning the ferromagnetic part for correcting the magnetic field against or inside the rear wall of the target. On the contrary, D3 provides for spacing between the ferromagnetic material and said target but does not give eigenvalues for such spacing.

It follows that the subject matter of claim 1 is novel (PCT Article 33(2)).

The solution to the problem, as proposed in claim 1 of the present application, is considered to involve an inventive step (PCT Article 33(3)).

Claims 2-7 are dependent on claim 1 and, as such, therefore also fulfil the PCT requirements of novelty and inventive step.

The amendments submitted with the letter dated 18 May 2004 do not cause the subject matter of the application to be extended beyond the content of the application as filed. As a result, said amendments are not contrary to the provisions of PCT Article 34(2)(b). The amendments in question are as follows:

1. "non-ferromagnetic" target: see figure 8, the magnetic field lines are not disrupted by the presence of the target.
2. "without modifying the physical properties of the magnetron". This expression has been interpreted in accordance with the following passages in the description: page 4, lines 17 and 18: "... to avoid modifying the stationary assembly of the magnetron" and page 11, lines 5-9, "... to avoid all modifications to the magnetron".
3. "optionally to indicate the end of life of said target": see page 6, lines 15-19.
4. "... juxtaposed to one of the walls thereof": see page 5, lines 30-33.

The rest of the amendments are based on the content of claims 5 and 8, as originally filed.